

REMARKS

The Official Action of March 7, 2005 has been carefully considered. The changes presented herewith, taken with the following remarks, are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

By the present amendment, the specification has been amended to provide the status of the parent application. Claims 16 and 18 have been amended to recite the second filtering member is configured relative to the air flow path such that the second filtering member is not exposed to direct air flow along the air flow path, in accordance with the teachings of the specification, for example at page 8, lines 10-13 and page 9, lines 16-18. Claims 22 and 23 are added and contain limitations from the specification, for example at page 9, lines 7-11 and Fig. 2. It is believed that these changes do not involve any introduction of new matter, whereby entry is believed to be in order and is respectfully requested.

The Examiner's indication of the allowance of claims 2-7, 9-15, 20 and 21 is acknowledged and appreciated, together with the Examiner's statements of reasons for allowance. As will be set forth in detail below, it is believed that claims 16-19 are similarly allowable and reconsideration is respectfully requested.

Claims 16 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Stemmer et al U.S. Patent No. 6,156,089 in view of the Oehler et al U.S. Patent No. 5,871,569. The Examiner asserted that Stemmer et al disclose a two-stage air filter comprising a layered filter that includes activated carbon supported on foam, followed by a second filter that includes potassium permanganate. The Examiner asserted it would have

been obvious to use the filter material comprising polyurethane foam filled with activated carbon at a density of up to and exceeding 0.30 g/cm^3 as taught by Oehler et al in the Stemmer et al device.

This rejection is traversed and reconsideration is respectfully requested. That is, the air filtering device defined by claim 16 comprises a first filtering member comprising activated carbon supported on a support member having a carbon density of between 0.01 and 0.32 g/cm^3 , a second filtering member, and an air flow conduit defining an air flow path through the device from an air inlet to an air outlet. The first filtering member and the second filtering member are positioned to interact with at least a portion of the molecules in the air flow path, the first filtering member is adapted to remove malodor molecules from the air flow path when air contacts the first filtering member, and the second filtering member is adapted to oxidize ethylene. The second filtering member is configured relative to the air flow path such that the second filtering member is not exposed to direct air flow along the air flow path. As set forth in the present specification, for example at page 8, beginning at line 21, it is believed that by minimizing immediate exposure of the oxidizing agent of the second filtering member, such as potassium permanganate, to air flowing directly through the device, a surprising increase in ethylene removal performance is achieved. It is believed that the oxidized reaction is catalyzed by activated carbon so that arranging the second filtering member in contact with the first filtering member, for example, rather than directly in the air flow path, optimizes ethylene oxidation.

Stemmer et al disclose various embodiments of two-stage air filters. While Stemmer et al disclose that a first filter element may comprise, among other materials, a sorbent such as activated charcoal, and the second filter element may comprise, among other materials, a biostat such as potassium permanganate, Applicants find no teaching or suggestion by Stemmer et al wherein either filter element, and particularly the second filter element, is configured such that the filter element is not exposed to direct air flow along the air flow path. To the contrary, Stemmer et al specifically disclose that both the first filter and the second filter element are positioned directly in the air flow path of the air filter.

While Oehler et al disclose a filter material comprising a foam support body and activated carbon particles loaded therein, Applicants find not teaching or suggestion by Oehler et al relating to an air filtering device as defined by claim 16, particularly wherein a second filtering member adapted to oxidize ethylene is configured relative to an air flow path such that the second filtering member is not exposed to direct air flow along the air flow path. Thus, Oehler et al do not resolve the deficiencies of Stemmer et al, and the cited combination of Stemmer et al and Oehler et al do not render the presently claimed air filtering device, or the improvement provided thereby in ethylene-oxidizing efficiency, obvious. It is therefore submitted that the air filtering devices defined by claims 16 and 17 are nonobvious over and patentably distinguishable from Stemmer et al in view of Oehler et al, whereby the rejection under 35 U.S.C. §103 has been overcome. Reconsideration is respectfully requested.

Claims 18 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Stemmer et al in view of the Gamson et al U.S. Patent No. 3,049,399. The Examiner asserted

that Gamson et al disclose a filter for deodorizing air in an HVAC system comprising potassium permanganate supported on granular alumina and zeolite between layers of a material that is either woven or non-woven. The Examiner asserted it would have been obvious to use the support taught by Gamson et al in Stemmer et al.

This rejection is traversed and reconsideration is respectfully requested. That is, claim 18 recites an air filtering device comprising a first filtering member, a second filtering member comprising an oxidizing agent supported on a structure comprising at least one of zeolite and alumina and included as part of a solid particle structure supported by a support comprising at least one of a foam structure, layered non-woven materials and layered woven materials, and an air flow conduit defining an air flow path through the device from an air inlet to an air outlet. The first filtering member and the second filtering member are positioned to interact with at least a portion of the molecules from the air flow path, wherein the first filtering member is adapted to remove malodor molecules from the air flow path when air contacts the first filtering member and the second filtering member is adapted to oxidize ethylene. The second filtering member is configured relative to the air flow path such that the second filtering member is not exposed to direct air flow along the air flow path. As noted above, this configuration enhances oxidation of ethylene in an efficient manner.

The Stemmer et al device is discussed in detail above. As noted, Applicants find no teaching or suggestion by Stemmer et al wherein a filtering member, particularly a second filtering member comprising an oxidizing agent, is configured relative to the air flow path such that the second filtering member is not exposed to direct air flow along the air flow path.

To the contrary, Stemmer et al disclose that both the first filter element and the second filter element are in the direct air flow path through the air filter device.

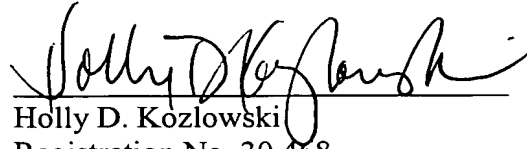
Gamson et al disclose a composition and method for deodorizing air. While Gamson et al disclose that the potassium permanganate may be provided on an alumina support, Applicants find no teaching or suggestion by Gamson et al for resolving the deficiencies of Stemmer et al with respect to the presently claimed first filtering member, second filtering member and air flow conduit defining an air flow path. Particularly, Applicants find no teaching or suggestion by Gamson et al of such a device wherein a second filtering member comprising an oxidizing agent is configured relative to the air flow path such that the second filtering member is not exposed to direct air flow along the air flow path. Similarly, Applicants find no teaching or suggestion by Gamson et al relating to any improvement provided by such a configuration. Accordingly, Gamson et al do not resolve the deficiencies of Stemmer et al whereby the air filtering devices defined by claims 18 and 19 are nonobvious over and patentably distinguishable from the combination of Stemmer et al and Gamson et al. It is therefore submitted that the rejection under 35 U.S.C. §103 based on Stemmer et al and Gamson et al has been overcome. Reconsideration is respectfully requested.

It is believed the above represents a complete response to the rejections under 35 U.S.C. §103, and places the present application in condition for allowance. Reconsideration and an allowance are requested.

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Respectfully submitted,

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